FIG. 1

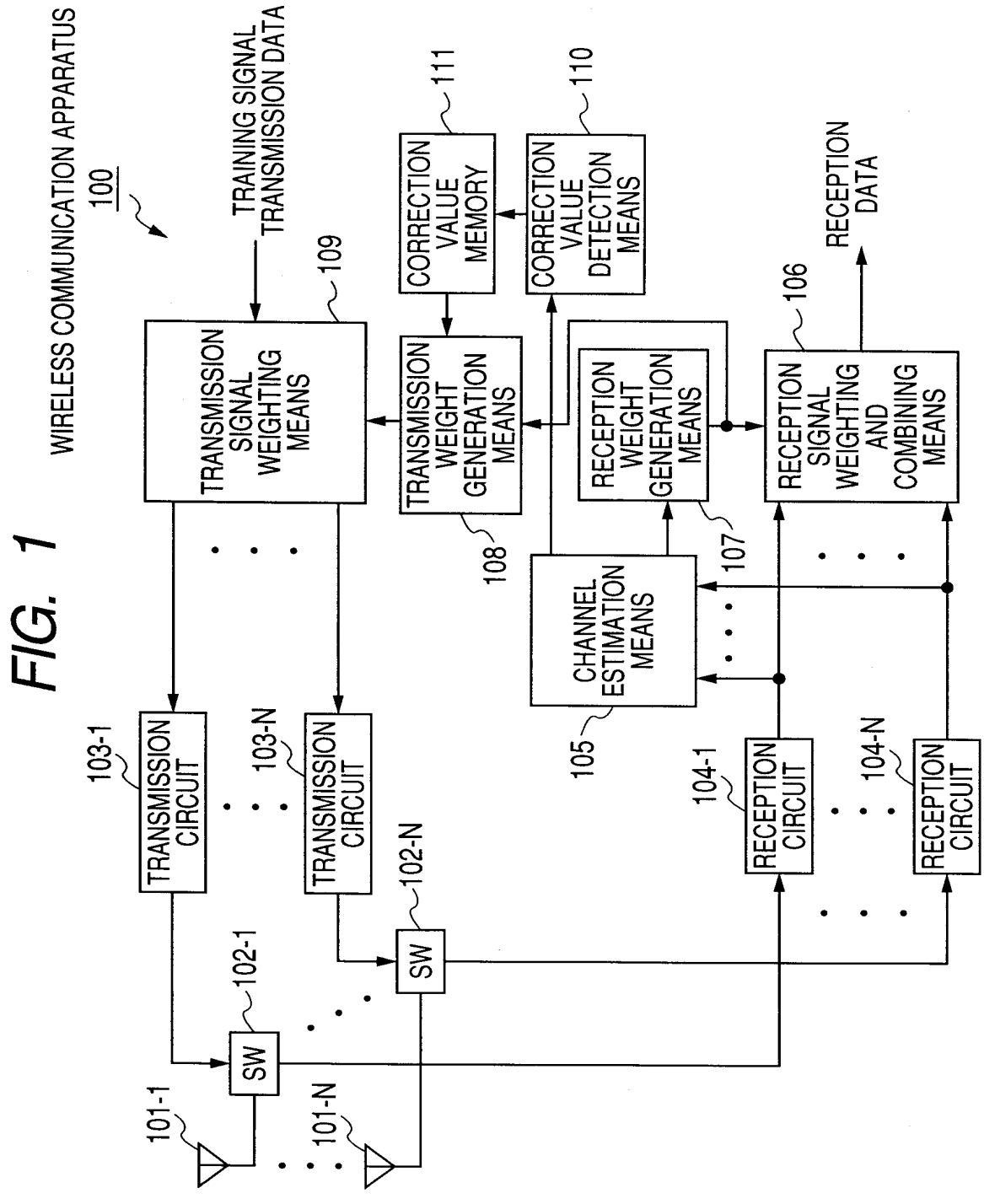

WIRELESS COMMUNICATION APPARATUS
100
TRAINING SIGNAL TRANSMISSION DATA
TRANSMISSION SIGNAL WEIGHTING MEANS
109
CORRECTION VALUE MEMORY
111
CORRECTION VALUE DETECTION MEANS
110
TRANSMISSION WEIGHT GENERATION MEANS
108
RECEPTION WEIGHT GENERATION MEANS
107
RECEPTION SIGNAL WEIGHTING AND COMBINING MEANS
106
RECEPTION DATA
CHANNEL ESTIMATION MEANS
105
103-1
TRANSMISSION CIRCUIT
103-N
TRANSMISSION CIRCUIT
102-1
SW
102-N
SW
101-1
101-N
104-1
RECEPTION CIRCUIT
104-N
RECEPTION CIRCUIT

FIG. 2

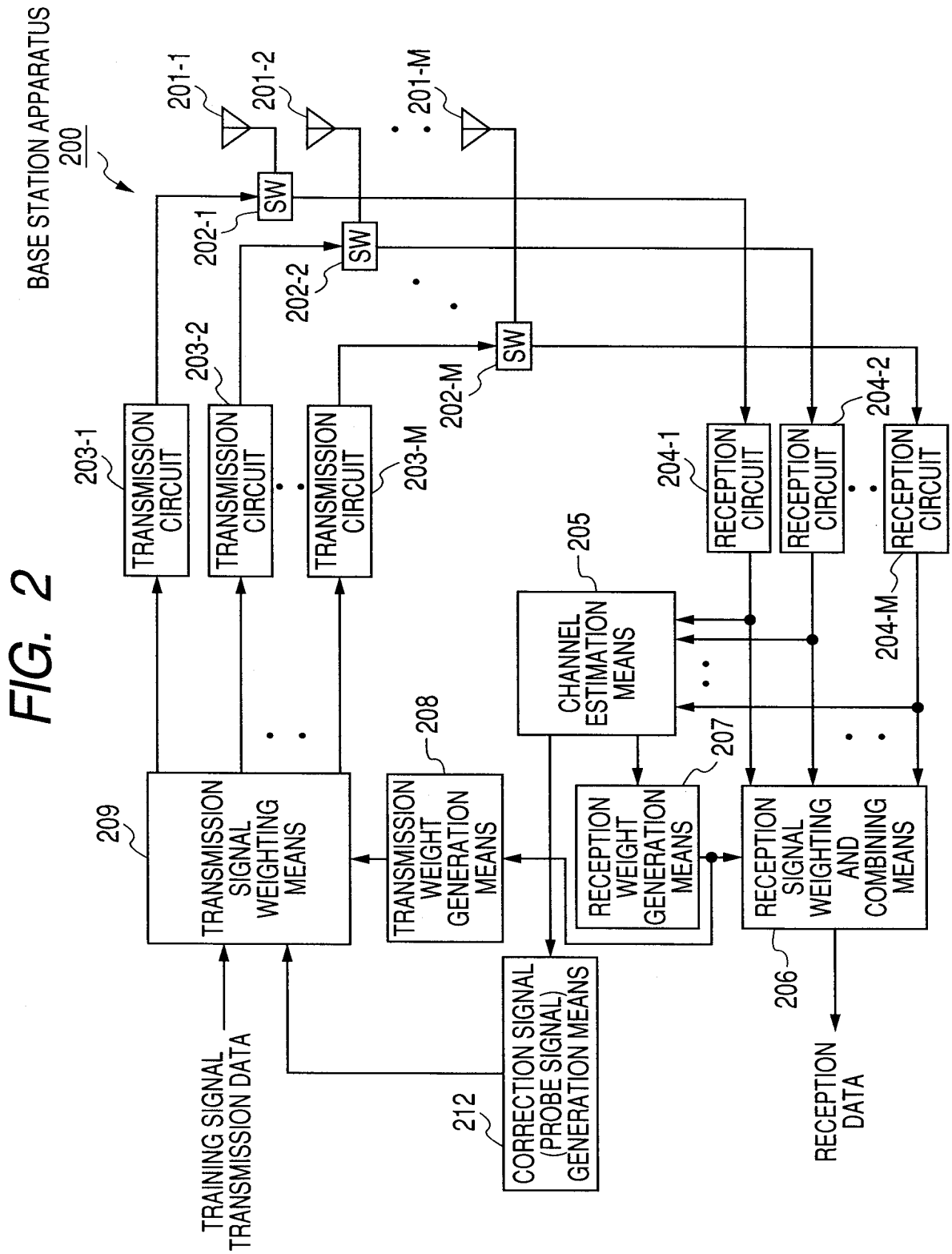

BASE STATION APPARATUS
200
201-1
201-2
201-M
SW
SW
SW
202-1
202-2
202-M
203-1
203-2
203-M
TRANSMISSION CIRCUIT
TRANSMISSION CIRCUIT
TRANSMISSION CIRCUIT
204-1
204-2
204-M
RECEPTION CIRCUIT
RECEPTION CIRCUIT
RECEPTION CIRCUIT
205
CHANNEL ESTIMATION MEANS
207
RECEPTION WEIGHT GENERATION MEANS
208
TRANSMISSION WEIGHT GENERATION MEANS
209
TRANSMISSION SIGNAL WEIGHTING MEANS
RECEPTION SIGNAL WEIGHTING AND COMBINING MEANS
206
TRAINING SIGNAL TRANSMISSION DATA
212
CORRECTION SIGNAL (PROBE SIGNAL) GENERATION MEANS
RECEPTION DATA

FIG. 3(a)

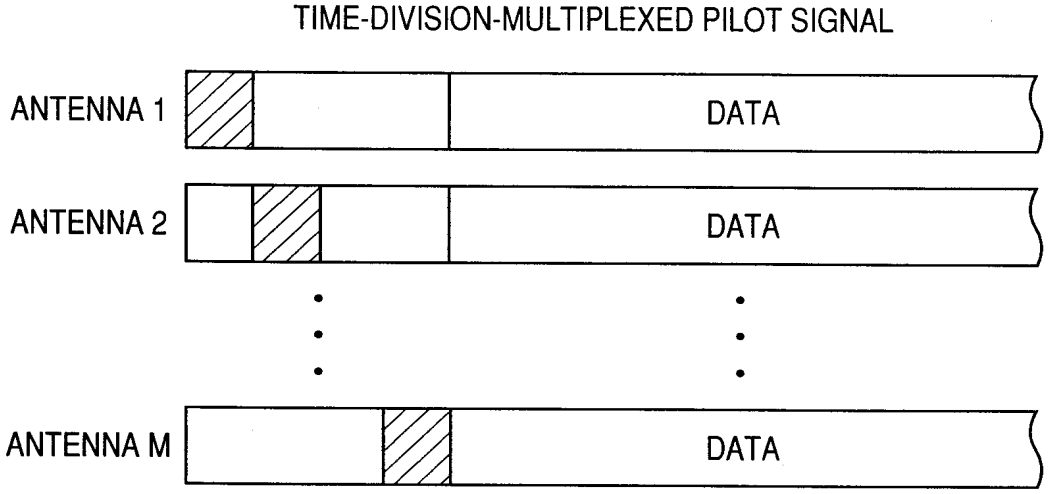

TIME-DIVISION-MULTIPLEXED PILOT SIGNAL
ANTENNA 1
DATA
ANTENNA 2
DATA
ANTENNA M
DATA

FIG. 3(b)

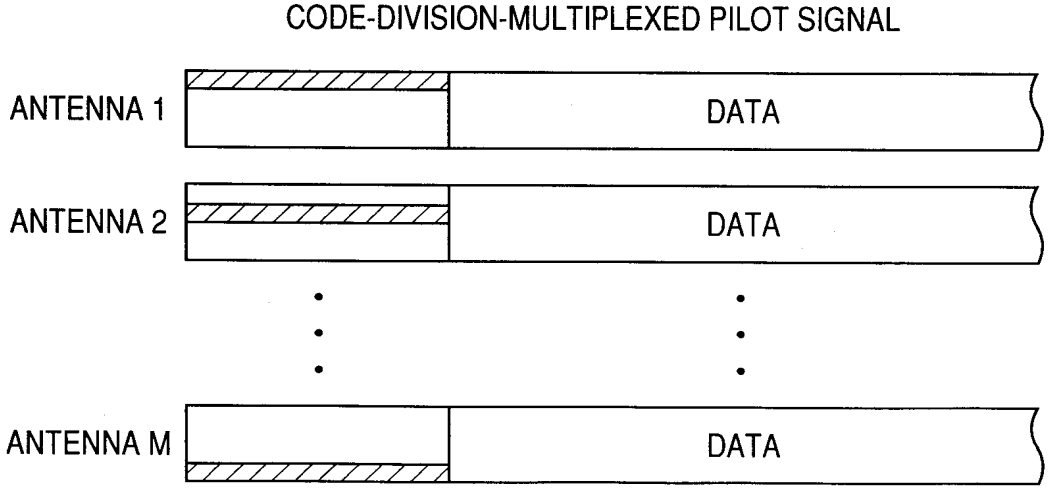

CODE-DIVISION-MULTIPLEXED PILOT SIGNAL
ANTENNA 1
DATA
ANTENNA 2
DATA
ANTENNA M
DATA

FIG. 4

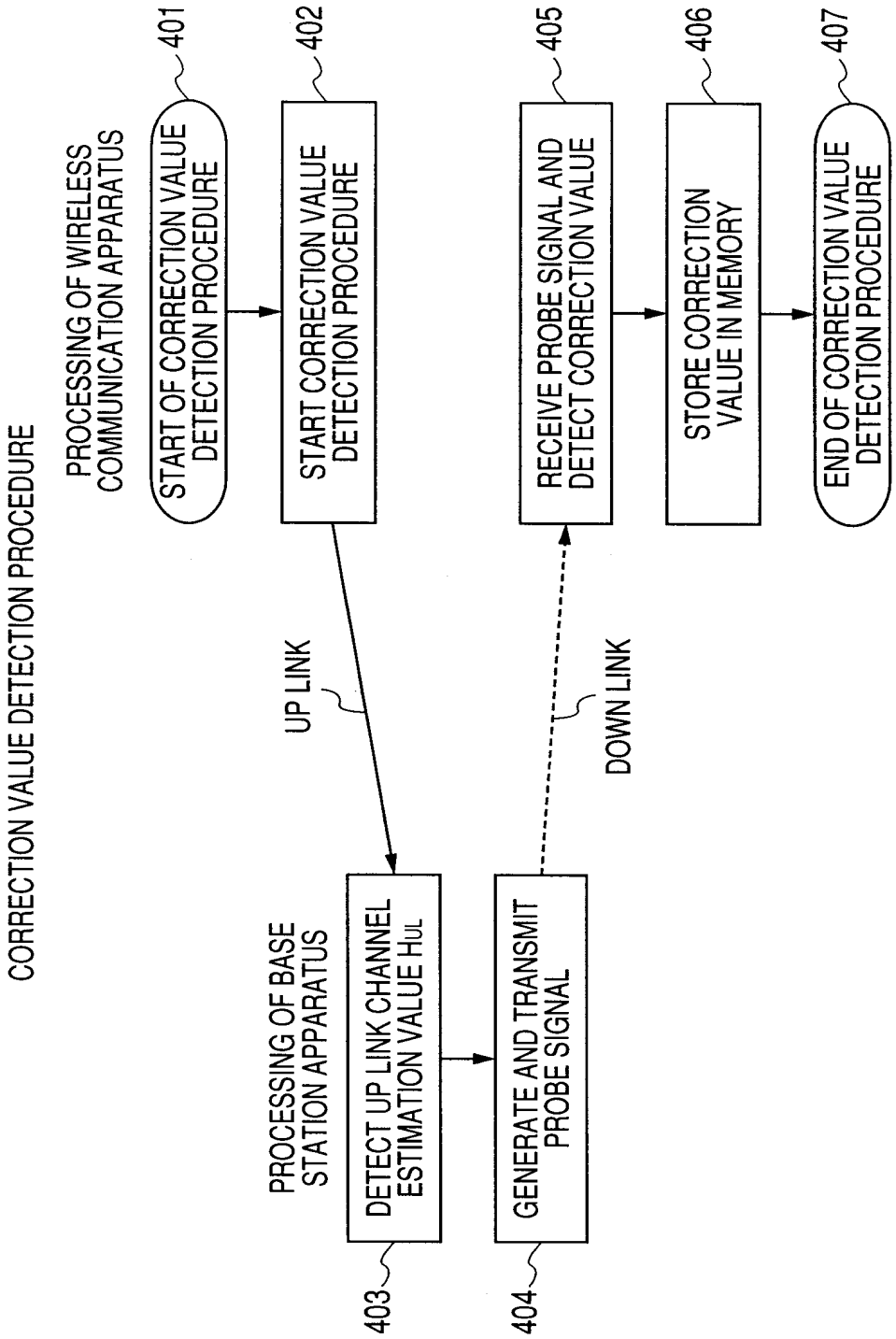

CORRECTION VALUE DETECTION PROCEDURE
PROCESSING OF WIRELESS COMMUNICATION APPARATUS
PROCESSING OF BASE STATION APPARATUS
401
START OF CORRECTION VALUE DETECTION PROCEDURE
402
START CORRECTION VALUE DETECTION PROCEDURE
UP LINK
403
DETECT UP LINK CHANNEL ESTIMATION VALUE H_{UL}
404
GENERATE AND TRANSMIT PROBE SIGNAL
DOWN LINK
405
RECEIVE PROBE SIGNAL AND DETECT CORRECTION VALUE
406
STORE CORRECTION VALUE IN MEMORY
407
END OF CORRECTION VALUE DETECTION PROCEDURE

FIG. 5

WEIGHT GENERATION PROCEDURE IN BASE STATION APPARATUS

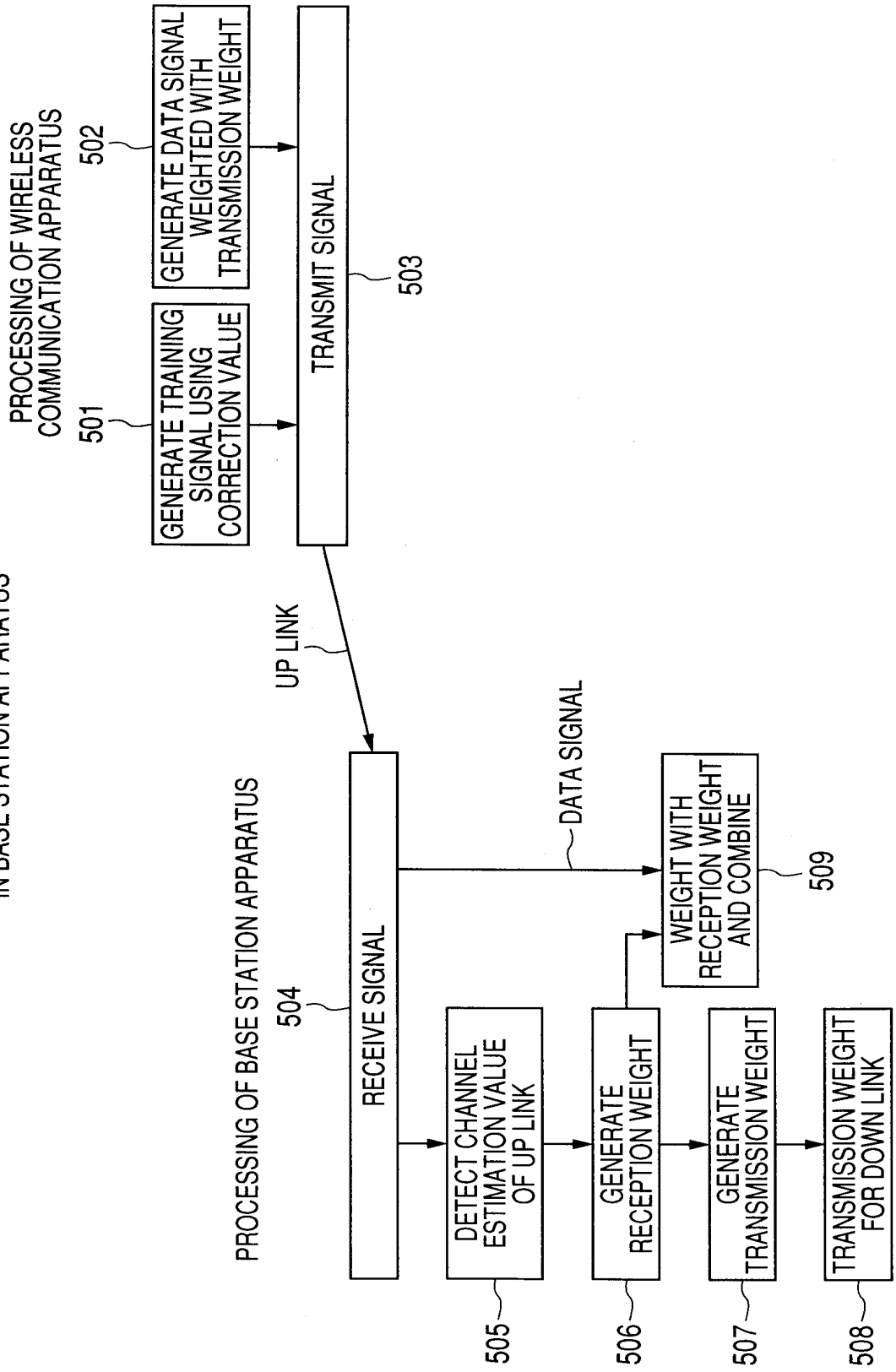


FIG. 6

WEIGHT GENERATION PROCEDURE IN WIRELESS COMMUNICATION APPARATUS

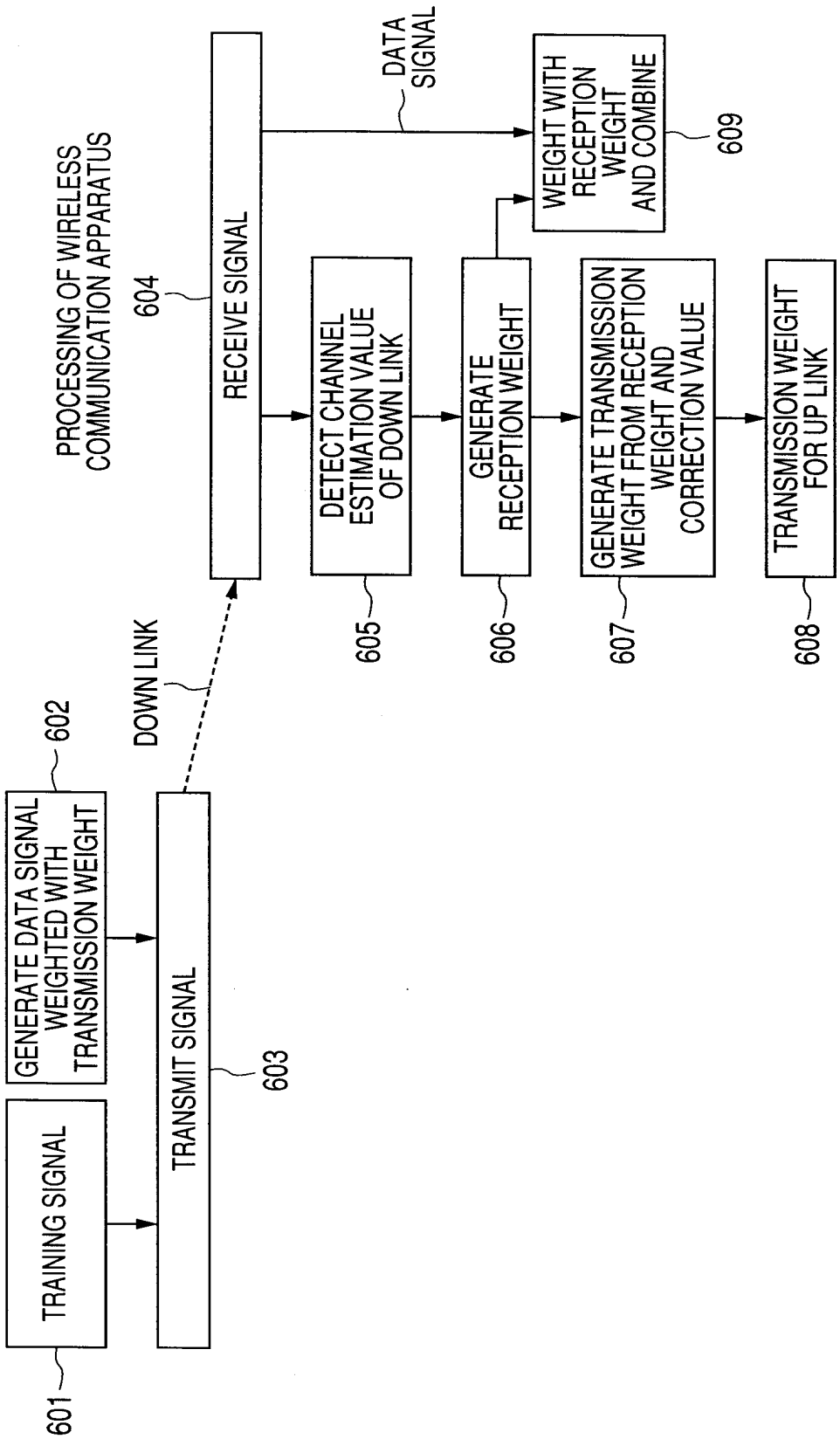


FIG. 7

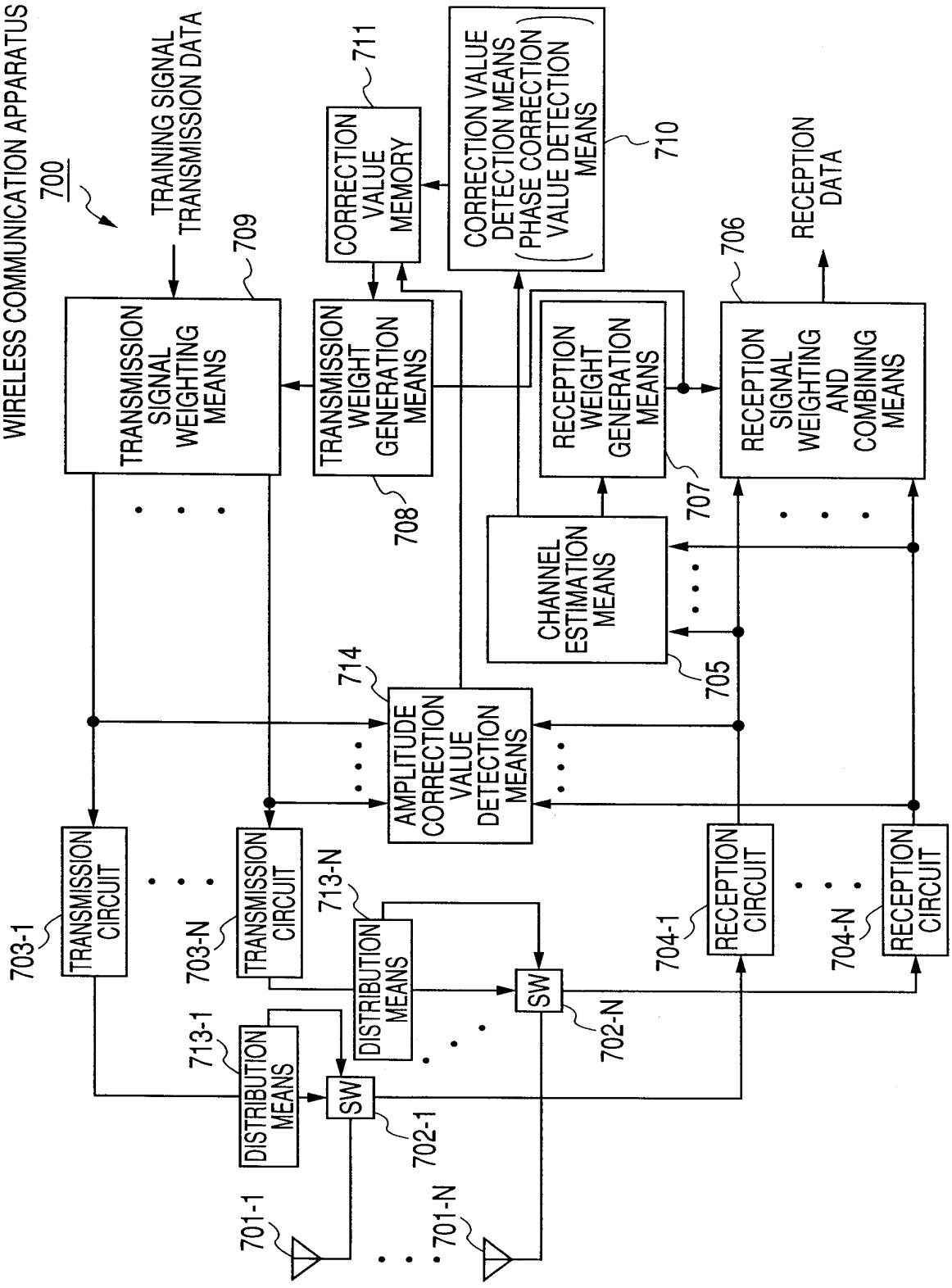
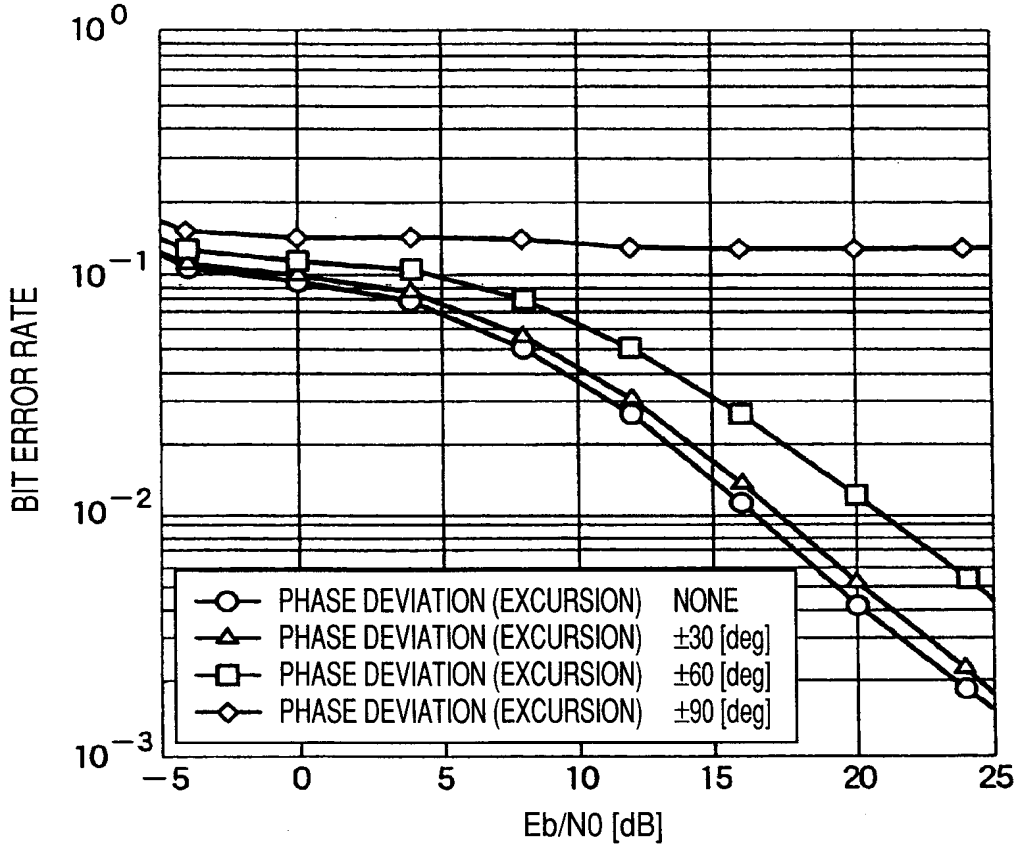

WIRELESS COMMUNICATION APPARATUS
700
TRAINING SIGNAL
TRANSMISSION DATA
TRANSMISSION SIGNAL WEIGHTING MEANS
709
TRANSMISSION WEIGHT GENERATION MEANS
708
CORRECTION VALUE MEMORY
711
CORRECTION VALUE DETECTION MEANS (PHASE CORRECTION VALUE DETECTION MEANS)
710
RECEPTION WEIGHT GENERATION MEANS
707
RECEPTION SIGNAL WEIGHTING AND COMBINING MEANS
706
RECEPTION DATA
CHANNEL ESTIMATION MEANS
705
AMPLITUDE CORRECTION VALUE DETECTION MEANS
714
703-1
TRANSMISSION CIRCUIT
703-N
TRANSMISSION CIRCUIT
713-N
DISTRIBUTION MEANS
713-1
DISTRIBUTION MEANS
SW
702-1
SW
702-N
704-1
RECEPTION CIRCUIT
704-N
RECEPTION CIRCUIT
701-1
701-N

FIG. 8



RECEPTION CHARACTERISTIC FOR Eb/N0